

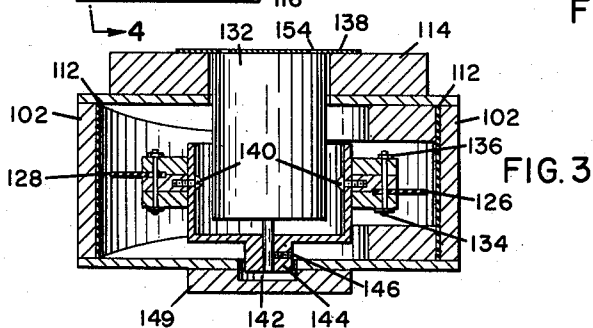
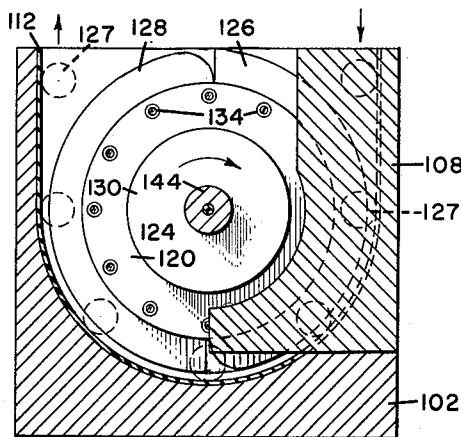
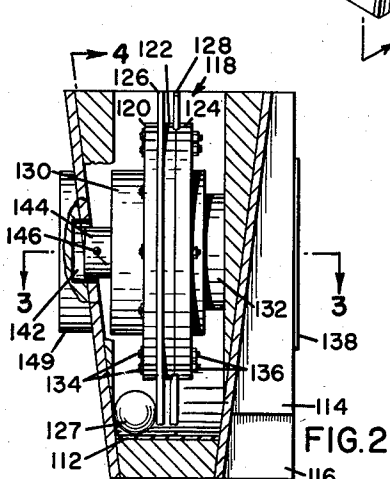
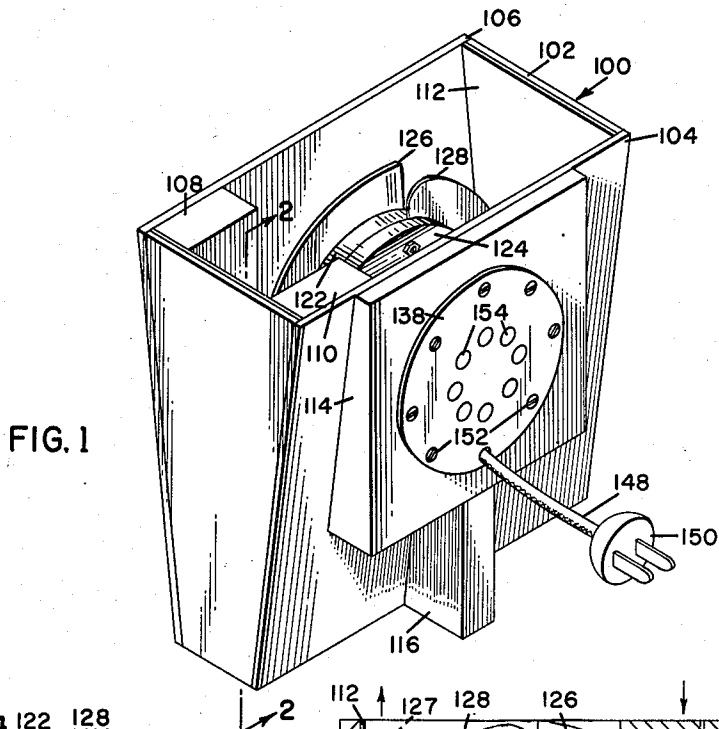
Feb. 23, 1960

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2,925,811

BALL THROWING MACHINE

Filed March 19, 1958



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BALL THROWING MACHINE

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Application March 19, 1958, Serial No. 722,511

5 Claims. (Cl. 124—6)

This invention relates generally to ball throwing devices, and more particularly to a machine for use in play practice or exercise; or wherever it is desired to automatically project a ball in an upward direction or at an angle from the vertical.

One object of this invention is to provide a simple mechanism for catching up and propelling a ball which has been fed to it.

A further object of this invention is to simulate as nearly as possible the grip and swing used in manually tossing a ball.

Still another object of this invention is to provide a ball throwing apparatus having a minimum of moving parts.

And yet another object of this invention is the provision of a machine for throwing a ball in an unpredictable or random manner.

Another object of this invention is to provide a ball thrower mechanism of relatively small dimensions.

And even another object of this invention is to provide a ball thrower mechanism which can handle such light and fragile articles as ping-pong balls without danger of crushing same.

These and other objects and advantages of this invention will become more readily apparent and understood from the accompanying specifications and drawings in which:

Fig. 1 is a perspective view of a ball thrower mechanism or machine incorporating the features of this invention;

Fig. 2 is a section of the machine taken along line 2—2 of Fig. 1;

Fig. 3 is a section view of the machine taken along line 3—3 of Fig. 2; and

Fig. 4 is a section of the machine taken along line 4—4 of Fig. 2.

Referring now to Figs. 1 to 4 of the drawings, the ball throwing device or machine is designated generally by reference numeral 100, and it consists of a hopper-shaped enclosure consisting of a tapered housing 102 and side members 104 and 106 fastened thereto.

The housing 102, as best seen in Fig. 4, is cut away internally into a U-shape. The taper is made equal on both sides of the housing 102 and is most constricted at the bottom of the U. A revolving assembly 118 is placed co-axially within the U.

This assembly 118 is built up of three wooden annular disks 120, 122, and 124 interleaved by two larger annular rubber disks 126 and 128 which project fin-like beyond the diameter of the wood disks 120, 122 and 124. These fins 126 and 128 extend a few degrees more or less than one-half of the circumference of the disks with the rest being cut away. It is to be noted, that fins 126 and 128 can be arranged so that they do not overlap and end short of each other or extend slightly past each other. Also, more than two fins 126 and 128 can be utilized. The fins 126 and 128 are arranged at two places around

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the circumference by displacing the disks 180 degrees with respect to each other and holding this relationship with machine screws 134 and nuts 136 placed at suitable intervals around the assembly 118.

A cup member 130 is fastened inside the disks 120, 122 and 124 by means of screws 140. A hub 144, provided with set screw 146, mounts the entire rotating assembly 118 on the shaft of an electric motor 132. The motor 132, in turn, is secured to the side plate 104 by means of a motor mount 114, a plate 138 and screws 152. Ventilating holes 154, for cooling the motor 132 may be provided in the end plate as shown. An electric cord 148 and attachment plug 150 provide connections to a suitable source of electricity.

An end cap 149, with a recessed opening 142, may be used to allow access to the hole of the rotating assembly 118, if desired.

A pair of wedge-shaped guides 108 and 110 are fastened inside the hopper-like housing 102. These guides 108 and 110 are provided with a matching taper thereto so as to form an essentially parallel-sided channel between them somewhat wider than the ball 127 to be propelled. The radius of the U in the housing 102 and that of the wood disks 120, 122, and 124, making up the rotating assembly 118, must also be proportioned so that the ball 127 will be able to pass thereunder.

The ball 127 is dropped or placed between the guides 108 and 110, and it drops downwardly as shown by the vertical arrow of Fig. 4. The ball 127 comes in contact with the inside of either finned disk 126 or 128. This gives the ball 127 a gradually accelerated forward motion in the direction of rotation of the assembly 118. The leading end of the opposing fin, either 128 or 126, catches up with the ball 127 in a few degrees of rotation and deflects it to the side.

The ball 127 is projected in an upward direction by either fin 126 or 128 as shown by the second vertical arrow. Inasmuch as the walls of the housing 102 diverge toward this outlet, the element of chance enters to cause the ball 127 to be ejected at various angles from the vertical. The governing factors for the direction of the ball 127, can be seen to be the degree of pinch exerted by the leading and lagging fins 126 and 128 and whether the ball 127 has been caught up near one or the other fin end.

It is obvious that many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise as specifically described.

What is claimed is:

1. A ball throwing apparatus, comprising, structure defining a housing open at its upper face, and tapered inwardly from its upper face to its closed lower face, said housing having a substantially U-shape recess extending from said upper face to adjacent said closed lower face thereof, a pair of spaced guide members located in said U-shape recess of said housing at one end thereof and extending substantially half-way around said U-shape recess toward the lower face of said housing for guiding a ball, a wheel mounted for rotation in said U-shape recess of said housing with its axis of rotation being located parallel to the upper and lower faces of said housing, and means including a fin mounted on said wheel and spaced from the wall of said U-shape recess of said housing and said spaced guide members for propelling a ball guided by said guide members into engagement with said fin and around the wall of said U-shape recess and upwardly through the open end of said housing, with the movement of said ball in the interior of said housing following a U-shape path.

2. A ball throwing apparatus as recited in claim 1,

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wherein at least two spaced fins are mounted on said wheel for propelling said ball through the open upper face of said housing.

3. A ball throwing apparatus as recited in claim 2, wherein each said fin extends substantially halfway around the periphery of said wheel, and means for rotating said wheel so that said fins will propel said ball through said open upper face of said housing. 5

4. A ball throwing apparatus as recited in claim 3, wherein said fins are disposed 180° from each other axially and in a spaced relationship at two diametrically opposed points. 10

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5. A ball throwing apparatus as recited in claim 3, wherein said means for rotating said wheel consists of a motor.

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